

DISCUSSION OF THE AMENDMENT

Due to the length of the specification herein, Applicants will cite to the paragraph number of the published patent application (PG Pub) of the present application, i.e., US 2004/0110896, when discussing the application description, both in this section and in the Remarks section, *infra*, rather than to page and line of the specification as filed.

Claim 1 has been amended by adding a thickness limitation, as supported in the specification at paragraph [0185].

Claim 5 has been amended into independent form, and to require the presence of an additive, as supported in the specification at paragraph [0118]-[0119], combined with [0122]-[0124].

New Claim 16 has been added, which is analogous to Claim 1 prior to the above-discussed amendment, but omits hydrogen from the definition of R^1 and R^2 .

New Claim 17 has been added, which is analogous to Claim 1 prior to the above-discussed amendment, combined with Claim 5 as above amended.

No new matter is believed to have been added by the above amendment. Claims 1, 2 and 5-17 are now pending in the application.

REMARKS

Applicants thank the Examiner for the courtesy extended to Applicants' attorney and Applicants' assignee's representative during the interview held May 9, 2007, in the above-identified application. During the interview, Applicants' attorney explained the presently-claimed invention and why it is patentable over the applied prior art, and discussed other issues raised in the Office Action. The discussion is summarized and expanded upon below.

The rejection of Claims 1 and 2 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over, JP 10-298292 (Ito), is respectfully traversed. Ito discloses a gradient material based on a silicon polymer of formula (1), i.e., $-C\equiv C-(R^3)_n-(R^2)_m-Si(R^1)(H)-$ and oxygen, wherein the amount of oxygen is greatest at the surface of the material, which amount decreases toward the interior of the material [0075]. Ito discloses only a molding of their material. While the Examiner finds that Ito discloses a film, based on a slice of their material of 10 μm , which is carried out simply to determine the oxygen gradient [0078], the issue is moot, because, as Applicants' attorney pointed out during the above-referenced interview, Ito's slice is substantially thicker than that now required by Claim 1. Accordingly, it is respectfully requested that this rejection be withdrawn.

The rejection of Claims 1, 2 and 5-15 under 35 U.S.C. § 103(a) as obvious over Ito in view of US 6,613,834 (Nakata et al) and US 6,162,743 (Chu et al), is respectfully traversed.

The disclosures and deficiencies of Ito have been discussed above. In addition, Ito neither discloses nor suggests their silicon polymer of formula (1) therein for any electrical use, let alone as an insulation film having a particular maximum relative dielectric constant, let alone next to another layer to be used as either an etching stopper or a hard mask, all as noted by Applicants' attorney during the interview. Nakata et al discloses a low dielectric constant film formed from a siloxane resin and a polycarbosilane, the polycarbosilane having

a formula (paragraph bridging columns 3 and 4) that does not include at least one $\text{-C}\equiv\text{C-}$ group between adjacent Si atoms. Chu et al discloses a low dielectric constant film having a Formula 1 therein (column 4, line 8ff), which Formula 1, like Nakata et al, does not contain a $\text{-C}\equiv\text{C-}$ group between adjacent Si atoms.

Without the present disclosure as a guide, one of ordinary skill in the art would not have combined Nakata et al and Chu et al with Ito. While the specific silicon-containing compounds of Nakata et al and Chu et al each are disclosed as useful for preparing low dielectric constant films, there is no reason to believe that the particular silicon-containing polymer of formula (1) of Ito would also have this utility, as Applicants' attorney submitted during the interview.

The Examiner interprets Claims 8 and 9 as not reciting a multilayer. It is respectfully submitted that the Examiner's interpretation is incorrect. As Applicants' attorney pointed out during the interview, in Claim 8, an etching stopper is claimed comprising the insulation film of Claim 1 below an upper layer film as recited. Similarly, Claim 9 is drawn to a hard mask comprising the insulation film of Claim 1 above an underlayer film as recited.

Claim 16 is separately patentable, since formula 1 of Ito requires a Si-H bond. Claims 5 and 17 are separately patentable, since Ito does not disclose the addition of the additives recited in these claims.

For all the above reasons, it is respectfully requested that this rejection be withdrawn.

The provisional rejection of Claims 1, 2, 8 and 9 on the ground of non-statutory obviousness-type double patenting over Claims 1, 9-14 and 16 of Copending Application No. 10/726,592 (copending application), is respectfully traversed. **Submitted herewith** is a terminal disclaimer over the copending application. Accordingly, it is respectfully requested that this provisional rejection be withdrawn.

Applicants respectfully submit that all of the presently-pending claims in this application are now in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Respectfully submitted,

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